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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11794-2-5 (1986): Laminations for Transformers and Inductors for Use in Telecommunication and Electronic Equipment, Part 2: Preferred Ranges of Laminations, Section 5: Lamination Type YEx-4 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR LAMINATIONS FOR TRANSFORMERS AND INDUCTORS FOR USE IN TELECOMMUNICATION AND ELECTRONIC EQUIPMENT

PART 2 PREFERRED RANGES OF LAMINATIONS

Section 5 Lamination Type YEx-4

0. General—This standard shall be read in conjunction with IS : 11794 (Part 1)-1986 'Laminations for transformers and inductors for use in telecommunication and electronic equipment : Part 1 General requirements and tests'.

1. Scope—This standard (Part 2/Sec 5) covers dimensions and tolerances together with the effective parameters of laminations of type YEx-4.

2. Description—These laminations have small dimensions for use on printed circuit boards and with smaller mounting area than YEx/range 2. The dimension of side a of this range varies from 8.4 to 42 mm and the ratio of lamination area (A_F) to window area (A_w) is 2.89, where:

$$A_F = a.b - A_w$$

$$A_w = c (e - d)$$

3. Dimensions and Effective Parameters—Dimensions and effective parameters are given in Tables 1A and 1B.

EXPLANATORY NOTE

The effective parameters are based on a stacking factor α of 0.95 and a stacking height equal to d . For the calculation in the case of different stacking factors, see 9.2.2 of IS : 11794 (Part 1) - 1986.

In the table of dimensions and parameters, the direction of rolling in the case of grain-oriented material has been indicated by a double-arrow.

This standard is being issued in two parts : Part 1 covering general requirements and tests, and Part 2 covering preferred ranges of laminations. Part 2 has the following sections:

Sec 1 Lamination type YEI-1

Sec 2 Lamination type YEx-2

Sec 3 Lamination type YED-2

Sec 4 Lamination type YEx-3

Sec 5 Lamination type YEx-4

Sec 6 Lamination type YUI-1

Sec 7 Lamination type YM-1

This standard based without any technical change, on IEC Pub 740-1982, 'Lamination for transformers and inductors for use in telecommunication and electronic equipment', issued by the International Electrotechnical Commission (IEC).

Adopted 30 September 1986

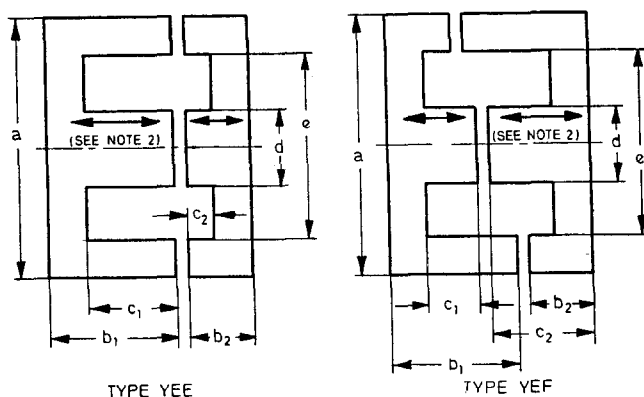
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TABLE 1A DIMENSIONS OF TYPE YEx-4
(Clause 3)

All dimensions in millimetres.



$$\text{Type YEE, } l_{Fe} = b_1 + b_2 + c_1 + c_2 + \frac{a + e - d}{2} = 6.5 d$$

$$\text{Type YEF, } l_{Fe} = 2 c_1 + 2 c_2 + \frac{a + e - d}{2} = 6.5 d$$

Designation	Reference Letter and Tolerance Code [See Table 4 of IS : 11794 (Part 1)-1986*]						
(1)	a (2) + IT 12 0	b ₁ (3) + IT 12 0	b ₂ (4) + IT 12 0	c ₁ (5) + IT 12 0	c ₂ (6) + IT 12 0	d (7) 0 - IT 11	e (8) + IT 10 0
YEE 4-2	8.4	4	2	2.8	0.8	2.4	6
YEE 4-3	10.5	5	2.6	3.5	1.1	3	7.6
YEE 4-4	13.4	6.4	3.2	4.5	1.3	3.8	9.6
YEE 4-5	16.8	8	4	5.6	1.6	4.8	12
YEE 4-6	21	10	5	7	2	6	15
YEE 4-8	26.6	12.7	6.3	8.9	2.5	7.6	19
YEE 4-10	33.6	16	8	11.2	3.2	9.6	24
YEE 4-12	42	20	10	14	4	12	30
Larger (see Note 1)	3.5 d	1.67 d	0.83 d	1.17 d	0.33 d	1 d	2.5 d
Tolerance Code	+ IT 12 0	0 - IT 12	0 - IT 12	+ IT 12 0	+ IT 12 0	0 - IT 11	+ IT 10 0
YEF 4-2	8.4	4	2	1.8	3	2.4	6
YEF 4-3	10.5	5	2.6	2.3	3.8	3	7.6
YEF 4-4	13.4	6.4	3.2	2.9	4.8	3.8	9.6
YEF 4-5	16.8	8	4	3.6	6	4.8	12
YEF 4-6	21	10	5	4.5	7.5	6	15
YEF 4-8	26.6	12.7	6.3	5.7	9.5	7.5	19
YEF 4-10	33.6	16	8	7.2	12	9.5	24
YEF 4-12	42	20	10	9	15	12	30
Larger (see Note 1)	3.5 d	1.67 d	0.83 d	0.75 d	1.25 d	1 d	2.5 d

Note 1 — When larger sizes are required it is recommended that the ratios indicated in the table are maintained [see 5.4 of IS : 11794 (Part 1)-1986].

Note 2 — Double arrow indicates direction of rolling.

*Specification for laminations for transformers and indicators for use in telecommunication and electronic equipment: Part 1 General requirements and tests.

TABLE 1B PARAMETERS OF TYPE YEx-4
(Clause 3)

Designation (See Note)	Core Area A_{Fe} (mm ²)	Magnetic Path Length L_{Fe} (mm)	Core Volume V_{Fe} (cm ³)	Core Constant C_1 (cm ⁻¹)
YEx 4-2	5.472	15.2	0.083 2	27.8
YEx 4-3	8.55	19.75	0.169	23.1
YEx 4-4	13.72	25	0.343	18.2
YEx 4-5	21.89	31.2	0.683	14.3
YEx 4-6	34.2	39	1.33	11.4
YEx 4-8	54.87	49.4	2.71	9.0
YEx 4-10	87.55	62.4	5.46	7.13
YEx 4-12	136.8	78	10.7	5.70

Note — YEx designates YEE or YEF.